6,046,968 U.S. Patent Apr. 4, 2000 Sheet 1 of 16 Figure 1a (PRIOR ART) Figure 1b (PRIOR ART) Figure 1c (PRIOR ART) Figure 2a (PRIOR ART) Figure 2b (PRIOR ART)

Figure 2c (PRIOR ART)

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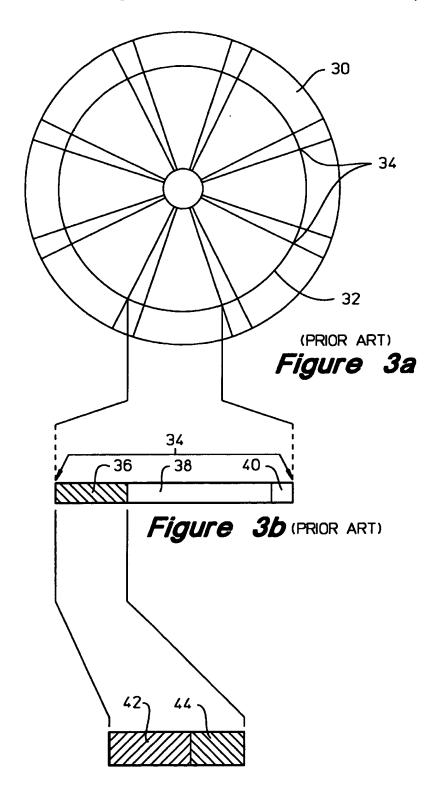


Figure 3c (PRIOR ART)

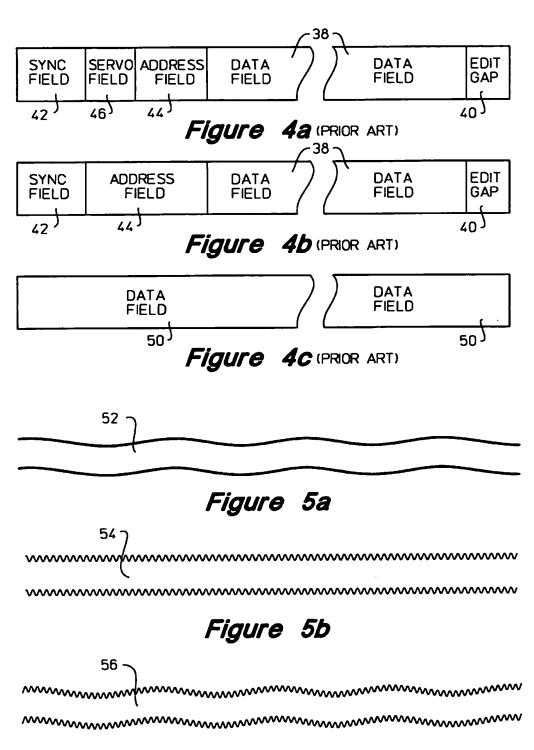
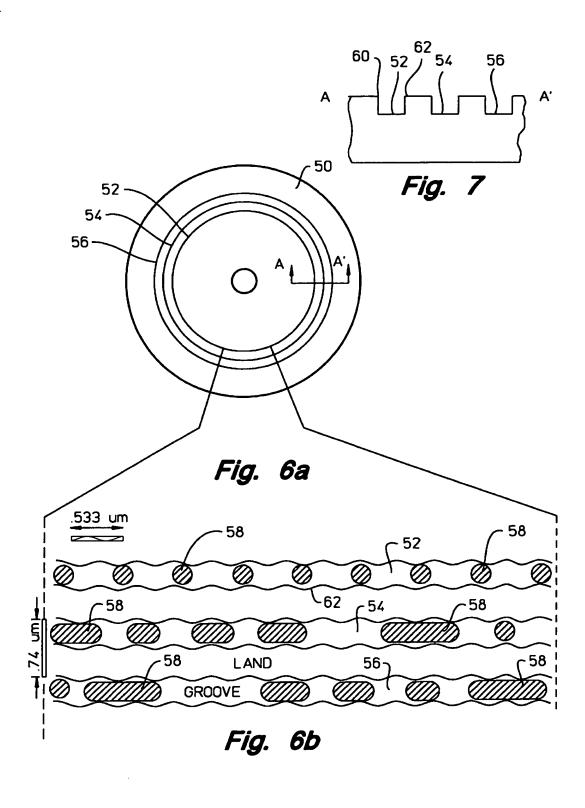


Figure 5c



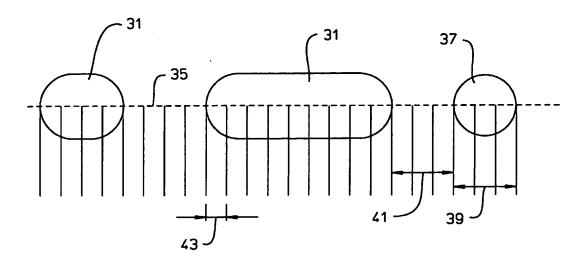


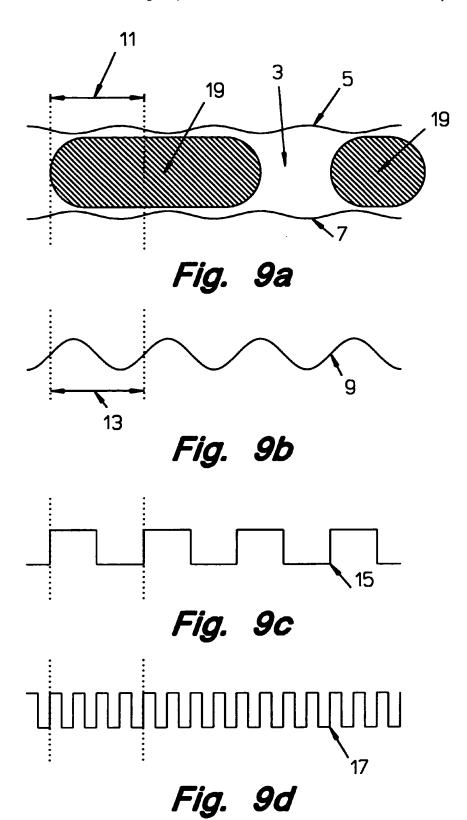
Fig. 8



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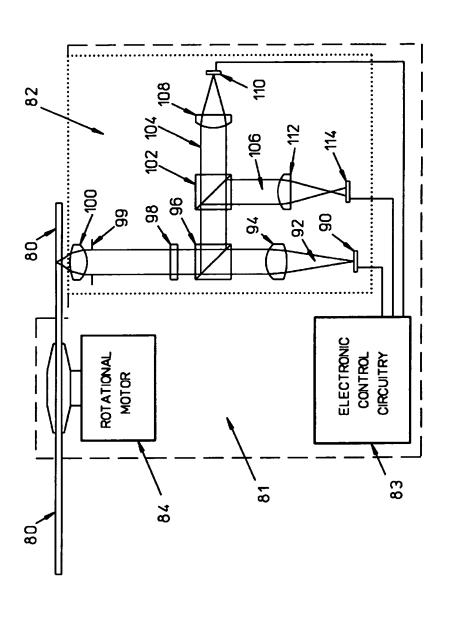
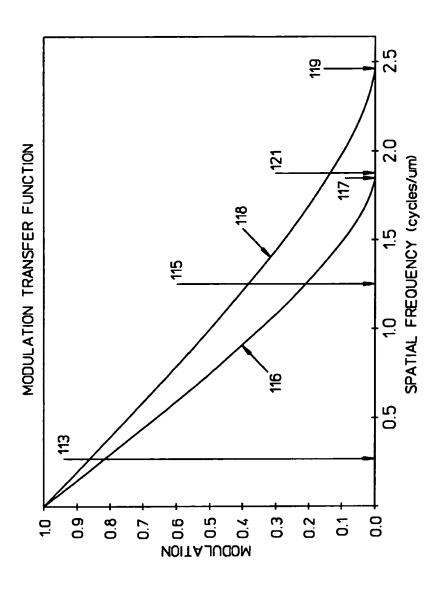
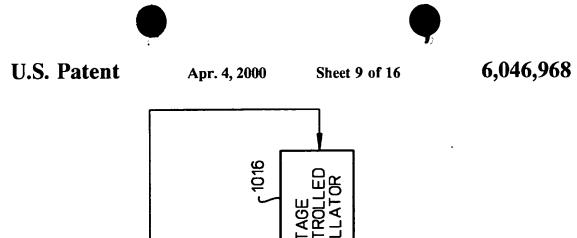


Fig. 10





VOLTAGE CONTROLL OSCILLATO .1020 WRITE CLOCK ž AMPLIFIER/ FILTER Z ·ŀ· PHASE DETECTOR

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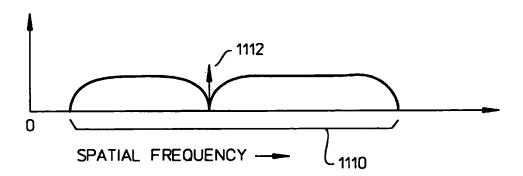


Fig. 13

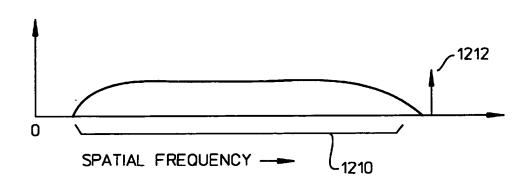


Fig. 14

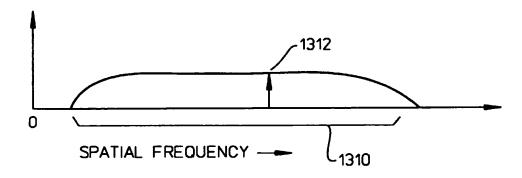
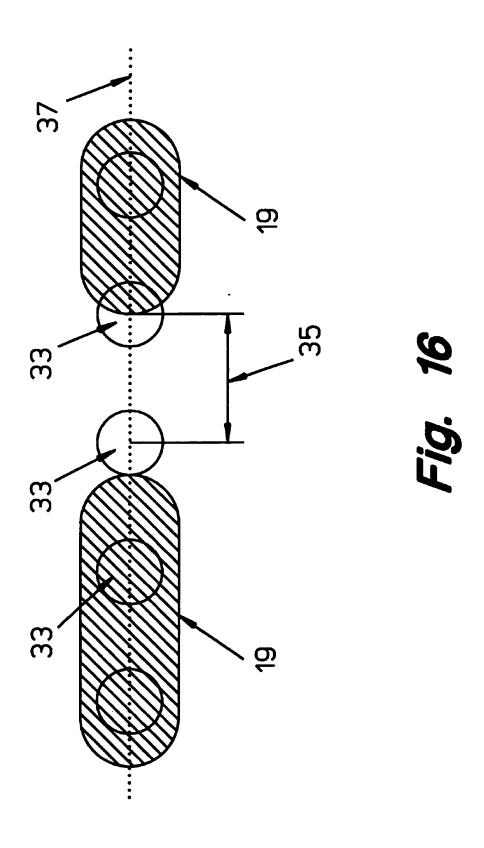


Fig. 15

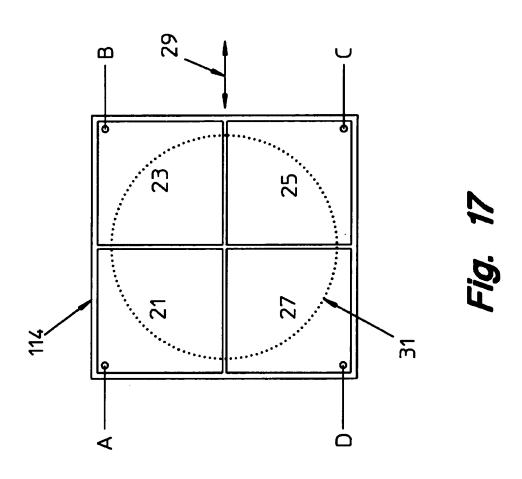
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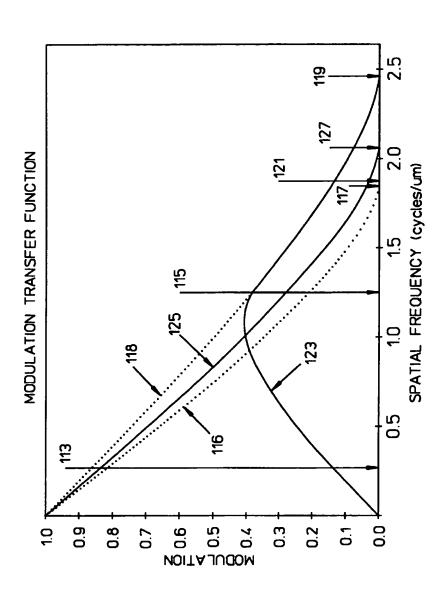
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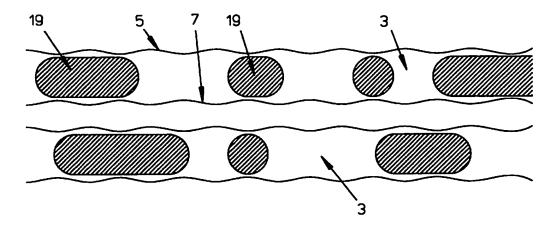












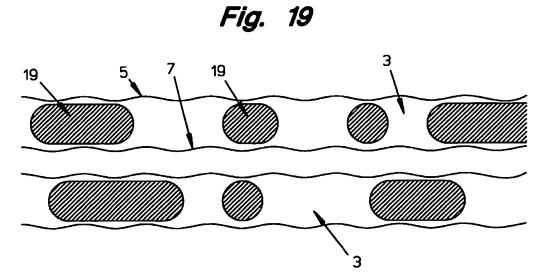
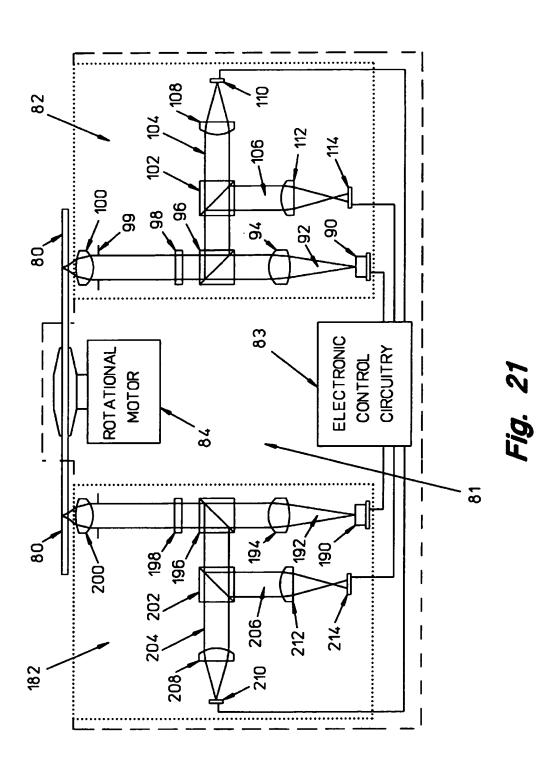


Fig. 20





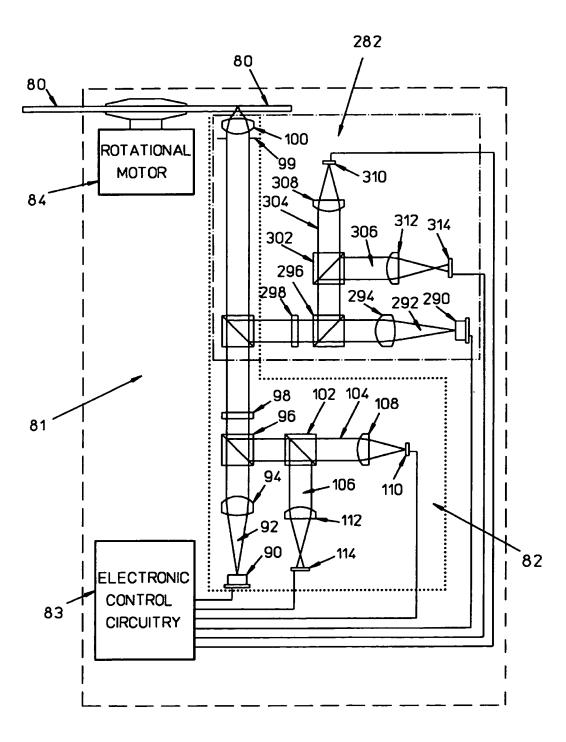


Fig. 22